

REMARKS

Claims 1-24 were pending and rejected in the above-identified patent application. Claims 1-11 and 17, 23 and 24 are being amended. No new matter is being added.

First, Applicant would like to thank Examiner Klinger for the many telephone conversations to discuss the current claims, the Carter reference and his concern that the remote link could be thought of as part of the network. Accordingly, Applicant is amending the independent claims essentially to indicate that the remote link is “separate from the network”, that the heartbeat signal is being sent “using a remote copy mechanism” or both.

The Examiner rejected claims 1-19 and 21-24 under 35 USC § 102(e) as being anticipated by Carter. Carter describes a cluster manager that determines whether a server of a current subcluster is available based upon heartbeat signals transmitted among the servers of the server cluster. Carter describes sending heartbeat signals over a WAN. Carter specifically states, “Moreover, the WAN 104 is generally operable to provide a communications link between the geographically distributed subclusters 112A, 112B, ... 112Z of the server cluster 106.” Carter does not describe a remote link coupled between the first storage system associated with the first host group and the second storage system associated with the second host group. As is clear from Fig. 1 of Carter, WAN 104 is not a remote link between the first storage system and the second storage system.

Independent claims 1, 9, 11, 23 and 24 and thus dependent claims 12-16 indirectly recite that the remote link is “separate from the network.” Accordingly, Applicant respectfully submits that claims 1, 9, 11-16, 23 and 24 are patentable over Carter for at least this reason, since Carter does not describe transmitting a heartbeat signal over a remote link separate from the network as recited. Although not so indicated, all claims 1-24 recite a “remote link” or a “remote mirror”.

Each of independent claims 1-11 and 17 and thus dependent claims 12-16 and 18-22 indirectly now recite that the heartbeat signal is sent “using a remote copy mechanism.” Accordingly, Applicant respectfully submits that claims 1-22 are patentable over Carter for at

least this reason, since Carter does not describe using a remote copy mechanism to send a heartbeat signal.

Carter teaches using a network, not teach a remote link or mirror as claimed. Accordingly, Applicant respectfully submits that claims 1-24 are patentable over Carter for at least this reason.

The Examiner rejected claim 20 under 35 USC § 103 as obvious over Carter. However, for at least the reasons stated above with reference to claims 1-19 and 21-24, claim 20 is patentable over Carter, since Carter does not teach or suggest transmitting a heartbeat signal over a remote link or using a remote copy mechanism.

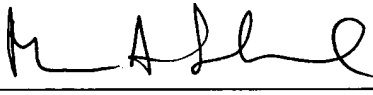
The Examiner asserted that claim 9 includes a type by using the language "by use of the remote mirror" instead of "by use of the remote link." However, Applicant respectfully points out that the claim 9 recites "a remote mirror", not "a remote link".

Applicant respectfully submits that claims 1-24 are patentable and nonobvious over Carter.

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